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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,576	09/20/2006	Kiyoshi Kato	0756-7833	1445
31780	7590	03/19/2009	EXAMINER	
ERIC ROBINSON			NGUYEN, VIET Q	
PMB 955			ART UNIT	
21010 SOUTHBANK ST.			PAPER NUMBER	
POTOMAC FALLS, VA 20165			2827	
			MAIL DATE	DELIVERY MODE
			03/19/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/593,576	<b>Applicant(s)</b> KATO ET AL.	
	<b>Examiner</b> Viet Q. Nguyen	<b>Art Unit</b> 2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 12/12/2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2 is/are allowed.
- 6) ☒ Claim(s) 1-7, 11-18, 22-23 is/are rejected.
- 7) ☒ Claim(s) 8-10 and 19-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/6/2008</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims **1-23** are pending for examination. The applicant's amendment/response filed on 12/12/08 have been considered and acknowledged. However, the case is still not in condition for allowance in view of the following newly discovered arts:

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims **1-7, 11-12, 14, 16-18, 22-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Gnadinger et al (US 6,268,796) and Ovshinky et al (US 5,296,716)**.

**Gnadinger et al (see Fig. 1)** clearly shows a semiconductor device (RIFD) using an **antenna coil 4**, see col. 2, and col. 6 (lines 12-15) mentions the purpose of antenna is to provide electromagnetic waveforms into AC signals and with the use of its energy-storing capacitor (42, see Fig. 2 embodiment) as power supply/storing means for generating internal power supply needed by the internal memory circuit, if any, thus obviously implying that such antenna circuit could transform its received

Art Unit: 2827

electromagnetic waveforms into internal power supply for any internal memory operations needed. Furthermore, the patent background (col. 1, line 58-60) briefly mentions various types of memories (for use with RFID tag) possibly including one such as, i.e., **ferroelectric type** memory, which inherently is a **phase-change** type structure well-known to one having ordinary skill in this art. Lastly, col. 4 (lines 20) mentions that the **substrate 60** (Fig. 2) where the memory circuits formed on could be **glass type substrate**, thus also obvious suggests the forming of any other phase-change memory types on this glass substrate as other alternative/obvious design choices, etc.

Regarding other claimed features, col. 7 describes further the use of memory control circuit, clock generating circuit, modulation/demodulation circuit, and interface circuit, etc. Flexible substrate could also be another design option as also briefly mentioned as **liquid plastic** material for substrate (see col. 4).

Furthermore, in view of other prior arts which have already disclosed that all phase change materials have **either amorphous or crystalline states** as their main memory states, it would have been obvious to one having ordinary skill in this art to easily create such a multi-state memory structure. For example, see **Ovshinsky et al (col. 7-9)**, which has been mentioned earlier in last Office Action, has at least suggested these memory states for various combinations of these phase change materials, etc.

4. Claims **13, 15-18 & 22** are rejected under 103 over **Gnadinger et al (US 6,268,796)** and **Ovshinky et al (US 5,296,716)**, as discussed above, and in further

view of **Tomon (US 6,727,862)**.

Regarding claims **13, 15-18 & 22, Gnadinger et al (US 6,268,796) and Ovshinky et al (US 5,296,716)** have been discussed above to teach every essential recited elements except for the use of thin film transistor as control transistor.

Claims **13 & 15** add the limitation or the use of a thin-film transistor which is not seen nor suggested in the primary references above. However, **Tomon et al (see col. 3)** suggests the use of a very thin film substrate (10 micro-meters) and a thin-film, bare IC control circuit of 40 micro-meter thickness for use in a similar memory structure that could have included any antenna, power supply circuit and general memory circuit, etc., but Fig. 6 further shows the inside structure of control circuit (bare IC 2) which could have also included other FET transistors (not shown) as obvious control thin film transistors as their alternative/design choices without further modification or hindsight construction. Thus, it would have been obvious to include thin-film control transistor for the shown antennae circuit of Gnadinger et al structure as well.

5. Other claims are either allowed or objected as being dependent upon rejected claims, but contain allowable subject matter as prior arts fail to teach or fairly suggest other claimed features such as, i.e., light transmitting bit lines, or specific phase change materials, and/or combinations of these materials making up the phase change memory, etc.

6. Additional references cited herein , but not applied, are cited for their suggestions of at least one or more of the above claimed features such as, i.e., RFID/security tags

Art Unit: 2827

with antenna circuits, mod/demod circuits, internal AC power supply, flexible substrate, phase-change memory cells, etc.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viet Q. Nguyen whose telephone number is (571) 272-1788. The examiner can normally be reached on 7am-6pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Viet Q Nguyen/  
Primary Examiner, Art Unit 2827

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Primary Examiner  
Art Unit 2827

V. Nguyen  
3/14/2009